

AMENDMENT AND RESPONSE TO OFFICE ACTION

In the Claims

1. (Three times amended) A protein fusion having a formula selected from the group consisting of E1-L_n-E2 and E2-L_n-E1, wherein E1 and E2 catalyze successive reactions in a polyhydroxyalkanoate biosynthetic pathway and are each selected from the group consisting of β-ketothiolases, acyl-CoA reductases, polyhydroxyalkanoate synthases, poly(3-hydroxybutyrate) synthases, phasins, enoyl-CoA hydratases, and beta-hydroxyacyl-ACP::coenzyme-A transferase, in which linker L_n is a peptide of n amino acids that link E1 to E2 or E2 to E1, and wherein the fusion protein is under the control of a single promoter resulting in expression of both catalytically active E1 and E2.

Remarks

Claims 1-6 are pending. Claim 1 has been amended. Support for the amendment to claim 1 can be found as implicitly stated on page 5, lines 21-24 and in the claims as originally filed. A copy of all of the pending claims as they are believed to have been amended is attached to this Amendment as an appendix.

The present invention is directed to the construction and expression of fusion enzymes for the production of polymer, where the enzymes are specific bacterial enzymes, and the polymer is polyhydroxyalkanoate. The examples provided disclose the fusion of multimeric enzymes which require the use of cofactors and which interact to synthesize polymer (page 5, lines 21-23).